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ABSTRACT

A central tenet of a self-schema model for depression is the idea that severity of depression is a crucial determinant of the content and cohesiveness of the depressive's self-schema. Consistent with predictions generated form this model, sample nondepressives displayed superior recall for self-referenced, nondepressed-content adjectives. Recall for mild depressives, however, failed to benefit significantly from self-reference judgments (i.e., judgments in answer to the question, "Does this adjective describe you?"). Medium depressives exhibited enhanced recall for self-referenced depressed- and nondepressed-content adjectives. Results offer an empirical demonstration of the role played by the self-schema in human information processing. In particular, the findings suggest that depressives employ a self-schema in personal information processing, but one which may differ in several ways from that of nondepressives. Further research might explore cognitive distortions or peculiarities in the depressive's evaluations, judgments, and descriptions of other individuals. (Author/CS)

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Encoding Personal Adjectives: The Effects of Depression on Self-reference

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Running Head: Content-specificity and depression

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Contemporary research in social cognition has increasingly emphasized a cognitive model of the self (Kuiper & Rogers, 1979; Markus & Smith, in press; Rogers, in press). In this approach, the self is viewed as a cognitive prototype (e.g., Rosch, 1975) or schema (e.g., Bartlett, 1932), which is critically involved in the processing of personal and social information about one's self and others. The self is defined as a list of general and specific terms that "have been derived from a lifetime of experience with personal data" (Roger, Kuiper, & Kirker, 1977, p. 677). The involvement of this self-prototype has been shown to impart both facilitative and biasing effects on the processing of personally relevant information (Bower & Gilligan, in press; Markus, 1977; Rogers, Kuiper, & Rogers, in press; Rogers, Rogers, & Kuiper, 1979). Illustrative is Ross & Sicoly's (1979) finding that people tend to overestimate their own contributions to a joint venture, and have more accurate recall for self-referent statements.

Also representative of social cognition research on the self is a study reported by Rogers et al. (1977). Subjects were first required to make a series of ratings on personal adjectives (e.g., shy, friendly). That is, individuals made synonymity or semantic judgments on some words (Does this word mean the same as a given word?), and self-reference (Does this word describe you?) judgments on others. These rating tasks produced memory traces, the strength of which were assessed using an incidental recall task subsequent to the ratings. The Rogers et al. data revealed recall superiority for the self-reference task. This was offered as support for the notion that the self produces strong, elaborate memory traces which, in turn, was held as support for the self as prototype or schema model (see also Kuiper & Rogers, 1979 for further convergent evidence).

Although extensive effort has been devoted to applying the self as prototype model to account for information processing biases in normal or non-pathological samples, the model's extension into pathological domains such as depression or paranoia has thus far been limited. However, the value of such an extension is apparent in view of the increasing theoretical and empirical emphasis on cognitive and interpersonal aspects of psychopathology in general (e.g., Bower, 1978), and depression in particular (Beck, 1976; Coyne, 1976; Hammen & Peters, 1978; Kovacs & Beck, 1978; Kuiper, 1978; Lewinsohn, 1975; Nelson & Craighead, 1977).

Beck (1976) has been foremost in outlining the theoretical importance of cognitions in depression. Based on clinical observation and empirical study, Beck asserts that thought disturbance is the pre-eminent depressive phenomenon. The depressive's evaluation of self, environment, and future (the cognitive triad) are negatively toned, influencing self-relevant information to be construed in unflattering, negative terms. Reflections about the self tend toward overcontrol of the environment, where personal responsibility is assumed for a variety of life events. As well, depressed individuals seem to believe themselves to be qualitatively inferior, tending to misinterpret and exaggerate losses, and overgeneralize the meaning of self-relevant information. This poor self-concept would appear to have implication for the manner in which depressives process personal information.

Accordingly, the present experiment was designed specifically to focus on how information about the self is processed by depressed individuals. Addressing questions of content regarding the depressives' self-schema, this cognitively-oriented approach focused on the nature of memory traces produced by judgments about the self.

In the one study attempting to evaluate the self-schema of depressives, Davis (1979) had both clinical depressives and nondepressives make various ratings on a set of 48 nonpathological adjectives taken from Jackson's (1967) Personality Research Form (see Rogers et al., 1977, Exp. 2 for precise details). As in Rogers et al. (1977), some ratings involved self-reference decisions (Describes you?), whereas others involved semantic judgments of meaningfulness. An incidental recall period for the adjectives followed these ratings. Results for the depressives indicated a failure to obtain the usual enhanced recall for adjectives rated under the self-referent task, when compared to recall levels for semantically rated adjectives. Noting that this traditional finding did occur for a nondepressed control group, Davis (1979, p. 107) concluded that "a self-schema is not an active agent in the encoding of personal information in depression as it is with normals", and that "depression involved non-schema-based responding". (p. 108).

Davis' conclusion appears somewhat inconsistent with the majority of the cognitive distortion literature documented for depression (i.e., Beck, 1976; Nelson & Craighead, 1977; etc.). Perhaps this inconsistency relates to the set of personal adjectives employed by Davis (1979). These adjectives had been previously selected precisely because of their nonpathological nature (see Rogers et al., 1977, p. 680). This suggests that the "normal" target stimuli utilized by Davis may have been inappropriate for tapping the potential existence of a depressive self-schema in depressives. Thus, the possibility remains that depressives may have an integrated self-schema, but for different content than nondepressives. That is, by incorporating depressive content in the personal adjectives, evidence for a depressive self-schema may be revealed.

The present study offers a first step toward resolution of the above issue by manipulating the content (depressed versus nondepressed) of the target adjectives

presented to depressed and nondepressed subjects. It utilized the group testing procedure of the depth of processing paradigm (see Craik & Tulving, 1975; and Rogers et al., 1977, Exp. 2), whereby individuals rated independently normed depressed and nondepressed personal adjectives under structural (Is this word long?) and self-referent (Describes you?) conditions. These ratings were followed by an incidental recall period.

Predictions for incidental recall patterns in this study revolved around a "content-specificity" hypothesis. If depressives possess an integrated self-schema, and if it is specific for depressively-toned adjectives, then the usual recall superiority of self-referent encodings (relative to structural ratings) may obtain only for depressive content for depressives. These results could then be interpreted in terms of the existence of a cognitive structure organized for the effective processing of depressive -related personal information. Conversely, nondepressed subjects may only evidence self-referent enhanced recall for nondepressed content, since Rogers and his colleagues (Rogers et al., 1977; Kuiper & Rogers, 1979) have found a consistent pattern for applicable self-referent words to be better recalled than nonapplicable words.

On the other hand, Davis' (1979) conclusion that depressives fail to process any personal information via a self-schema would predict poor self-referent recall (when compared to structural recall) for both depressed and nondepressed content adjectives, for depressives.

To summarize, the present study offers a test of a "content-specific" versus "non-schema" interpretation of depressives' processing of personal information. If depressives showed enhanced recall for depressive self-referent adjectives, the former interpretation would be supported. However, if depressives do not exhibit superior self-reference recall for either content category, then Davis' earlier

conclusions would receive additional empirical support.

It might be noted that the "content-specificity" hypothesis can be divided into two related sets of predictions. As indicated above, the most robust form would reveal enhanced self-reference recall of depressed adjectives for the depressed group, whereas the nondepressives would exhibit superior recall for self-referenced nondepressed adjectives. However, support for a self-schema interpretation for depressives might still emerge if results were to show enhanced recall for the self-reference task for depressives, regardless of the content manipulation. This pattern might obtain if depressives considered both depressed and nondepressed content adjectives to be self-referent, while non-depressives viewed only the nondepressed adjectives as self-referent.

One variable which might account for the exact pattern of depressive incidental recall is level or depth of depression. The most robust version of the "content-specificity" hypothesis may apply only to more severe or clinical depressives (e.g., the level tapped by Davis, 1979). Individuals with high levels of depression may conceptualize themselves more in depressive than nondepressive terms. These subjects might thus possess a self-schema which emphasizes depressive content, to the detriment of non-pathological structure. In contrast, individuals at more moderate levels of depression may view themselves as possessing both depressed and nondepressed characterisitics. The present study investigated this issue by assessing the relationship between Beck Depression Inventory scores and level of incidental recall for depressed and nondepressed personal adjectives.

Method

Overview Eighty-six university students were tested in a group setting. They made both structural (Is this word long?) and self-referent (Describes you?) ratings on a set of 60 personal adjectives. Half of the adjectives rated under each task were "nondepressed" in content, and half were "depressed." Following this, subjects were unexpectedly asked to recall as many of the adjectives as

possible. Finally, subjects completed the Beck Depression Inventory (BDI) to assess their level of depression. The BDI scores were then used to form three groups (nondepressed, mildly depressed, moderately depressed), with incidental recall performance being assessed separately for each group.

Subjects Eighty-six introductory psychology students (52 female) at the University of Western Ontario participated in partial fulfillment of course requirements. The average age of males was 19.4 years (range 18-26), while the average age of females was 19.5 years (range 18-23). On the basis of the BDI scores obtained at the conclusion of the experiment three groups were formed; (a) 51 individuals were assigned to the nondepressed group (BDI range 0-8, Mean = 3.82); 21 individuals were assigned to the mild depressed group (BDI range 9-13, Mean = 11.05), and (c) 14 persons were assigned to the medium depressed group (BDI range 14-31, Mean = 19.86).

Materials While the present methodology has been extensively utilized on "normal" groups, caution must be exercised in its application to pathological samples (i.e., depressives), especially in view of the pathological versus nonpathological nature of the target adjectives employed. This distinction necessitated the initial acquisition of normative ratings on a variety of "depressed" and "nondepressed" personal adjectives. In this independent norming study (see Derry & Kuiper, Note 1), seventy-two university students rated a large pool of adjectives under four categories: Content (depressed versus nondepressed), Imagery (c.f., Paivio, Yuille, & Madigan, 1968), Social Desirability (Jackson, 1967), and Emotionality. Several relevant sources in the personality and depression literature were consulted to generate the intial pool. Adjectives presumed to be "nondepressed" were obtained from scale descriptions of Jackson's (1967) PRF (see Rogers et al., 1977, p. 680, for greater details), and were viewed as representative of a broad range of normal characteristics (e.g., shy, rational). Those assumed to be

"depressed" were obtained from (a) Lubin's (1965) Depression Adjective Checklists (Forms A and B), and (b) Beck's (1976) descriptions of the depressed individual. Ratings were made along 7-point scales, and were presented in random sequences for rating. In selecting the final adjectives (30 depressed, 30 nondepressed), norms on the four ratings, plus word frequency (Kucera & Francis, 1967) and word length (number of letters per word) were considered and controlled for.

In summarizing attributes of the final set of words, (a) there was no overlap on the content ratings for the two types of adjectives, with all non-depressed adjectives having a rating greater than 4.75, and all depressed words being rated below 2.85. As well, words were matched on Imagery ratings (ranging in values from 3.5 to 4.7), and were equivalent on word length and word frequency (see Kuiper & Derry, Note 1 for further details). Examples of depressed adjectives are: bleak, dismal, guilty, helpless, and weary. Non-depressed adjectives included: amiable, curious, loyal, organized, and pushy.

Two rating tasks were used in the present study. Whereas the structural rating required a judgment regarding the length of the adjective (Cue question "Long?"), subjects making a self-reference rating decided if the word was self-descriptive ("Describes you?"). Two random orders were generated to ensure the adjectives were completely counterbalanced across the two types of tasks. Within each task order, one half of the words were given a structural rating, and one half were self-referenced. For each task, half of the adjectives were depressed in content, and half were nondepressed.

The 60 adjectives derived from the independent norming study were used in this experiment, along with four further buffer items of two ratings each at the beginning and end of the lists. These items (2 depressed and 2 nondepressed) were not included in the data analysis, as they were intended to minimize the

effects of primacy and recency in incidental recall.

Procedure Subjects were provided with a booklet which included a rating sheet containing cue questions indicating which of the two rating tasks they were to perform on a given word. After subjects read the task cue question to themselves, an adjective was read aloud by the experimenter. Subjects made a Yes or No response on the rating sheet. After all ratings, subjects were unexpectedly given four minutes to recall, in any order, as many of the adjectives as they could by writing them on the back of their sheet. Following the recall period, subjects completed the Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) to provide a measure of depth or severity of depression.

The BDI is a 21 item self-report inventory (range = 0 -63) which was constructed to reflect depth of depression. The internal consistency and validity of this widely used measure are reported in Beck & Beaumesderfer (1974). More recently, Bumberry, Oliver, & McClure (1978) reported data indicating the BDI is a valid instrument for use on a university population.

Results and Discussion

In scoring protocols for each subject, buffers were not included, grammatical transformations were scored as incorrect, and a proportion correct score was calculated to ensure that differential numbers of Yes and No ratings were not affecting recall scores. This adjusted recall score reflects the general finding that Yes-rated words are better recalled than No-rated words (see Craik & Tulving, 1975). The subject-specific proportion score adjusts for different numbers of Yes and No responses. Thus, each subject's recall of Yes-rated words under a given rating task was divided by the number of Yes ratings made while doing that task. Consequently, the adjustment represents

the proportion of recalled words each person rated Yes, for each task. A similar procedure was used for No-rated words (see Rogers et al., 1977, p. 683-684 for greater detail).

An analysis of variance was performed on the incidental recall data for the three Groups, as a function of Content (Depressed, Nondepressed), Rating Task (Structural, Self-referent), and Rating (Yes, No). The mean adjusted recall scores for this classification are presented in Table 1. From the analysis

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insert Table 1 about here

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of variance, a marginally significant main effect of Groups emerged, (F (2,83) = 2.82, p <.08). Inspection of the means for this factor revealed that Depressives (Mean = .21 for both Mild and Medium levels) tended to exhibit slightly superior recall compared to Nondepressives (Mean = .17). This failure to register an overall memory deficit for depressives is of some interest, as it seems to argue against any alternative interpretations of the present data based on factors such as greater inattentiveness, reduced motivational levels, and/or increased cognitive interference for depressives (see Miller, 1975; Miller & Lewis, 1977).

A further inspection of the recall data revealed that, overall, the self-reference task (Mean = .23) produced recall superior to that of the structural task (Mean = .15). The analysis of variance confirmed this superiority, as the main effect of Rating Task was highly significant, (F (1,83) = 21.43, p <.001). This basic finding replicates the expected depth of processing effect, which has been consistently reported in the cognitive and social cognition literature. Furthermore, this significant pattern lends support to the argument that the present manipulation of Rating Tasks was meaningful, not only for nondepressives, but also for depressives. This initial hint that depressives may also by responsive

to a self-reference manipulation is inconsistent with earlier reports by Davis (1979) documenting a lack of responsivity.

The analysis of variance also revealed that several of the higher-order interactions were significant, including a two-way interaction between Rating Task and Content (F (1,83) = 5.79, p <.05), and a three-way interaction between Rating Task, Rating (Yes, No) and Content (F (1,83) = 5.16, p <.05). However, the most informative interaction was the four-way interaction involving the Groups, Content, Rating Task, and Rating (Yes, No) Factors, (F (2,83) = 3.26, p <.05). A Newman-Keuls post-hoc inspection for significant differences among the means comprising this interaction was performed, with the results most readily summarized according to Groups.

For Nondepressed subjects, superior recall for self-reference judgments (when compared to structural ratings) was evident only for the Nondepressed Content adjectives receiving a Yes-rating (p <.05). This finding offers strong support for the most robust version of the content-specificity hypothesis for Nondepressives.

Recall patterns for the mildly-depressed group suggests a slightly different interpretation. While there was a trend towards self-reference recall superiority (relative to structural recall) for both depressed and nondepressed content, the post-hoc analysis revealed that all within-group comparisons failed to reach traditional levels of significance (i.e., p's < .05). This pattern suggests that the effective and efficient processing of personal information associated with a self-schema in Nondepressives may not be evident in Mildly Depressed persons.

Finally, in contrast to the Mild Depressives, the post-hoc analysis performed on the means for the Medium Depressed group revealed significant self-reference recall superiority (over structural recall) for Nondepressed, Yes-rated adjectives (p <.01). This finding virtually duplicates the nondepressed content results

for Nondepressives. As such, it argues strongly for a self-schema interpretation, rather than one focusing on the purported absence of such a cognitive structure in depressives. Furthermore, the pattern of findings for depressed-content adjectives (No-rated) also seems to point to the effective use of a self-schema by Medium Depressives. Under these conditions, only this group displayed elevated recall for self-referenced adjectives, with the post-hoc analysis indicating recall for Medium Depressives was superior to recall for Nondepressives ($p < .05$).

In sum, the pattern of recall for Medium Depressives offers support for the less robust version of the content-specificity hypothesis. Contrary to a non-schema based hypothesis, recall levels for Medium Depressives benefited significantly under both depressed and nondepressed content conditions from self-reference ratings.

Severity of Depression The present pattern of results stands in apparent contrast to the findings of Davis (1979). Accounting for this may be differences in depth of depression: Mild to Medium depressives were included in the present report, whereas more severelydepressed patients (Mean BDI = 28) were included in the Davis study. Within the deeper level, Davis reports no effects due to severity. However, severity may remain an important factor when considered across a broader range of depression. Specifically, the ratio of depressed to nondepressed content in the self-schema may systematically increase as depth of depression increases. At the more severe levels, depressed content may even predominate and become quite central (Beck, 1976).

Empirical support for the above theoretical notion emerges through examination of the pattern of self-reference endorsements (Yes ratings) for depressed and nondepressed content adjectives, as a function of level of depression. This

shifting pattern is documented in Table 2, and indicates, as expected, that

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insert Table 2 about here

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nondepressives endorsed significantly more nondepressed adjectives than depressed ($p < .001$). Also, as expected, the mean number of Yes-ratings for depressed content increases significantly with both increases in depression level (p's $<.001$). Of major interest, however, is the finding that this increased depression endorsement appears to be at the expense of nondepressed content endorsement. Rather than the two types of ratings being independent, there is a negative relationship, with nondepressed endorsements decreasing significantly with each increase in depression level (p's $< .05$). This relationship is such, that by the Medium Depression level, there is no longer a signficant difference between the mean number of Yes responses for depressed versus nondepressed content. Extrapolating to more severe depressions, this pattern hints at depressed content pre-eminence at these deeper levels, with a possible resulting absence of any self-reference enhancement effect for nondepressed content (i.e., Davis, 1979).

Overall, this shifting endorsement pattern offers further support for the proposal that severity does have an influential impact on the exact content and nature of the depressive's processing of personal information. Furthermore, it also offers strong empirical evidence for Beck's (1976) contention that depressive content becomes more central in cognitive structures or schemas, as depression level increases.

General Discussion

The present results provide an empirical basis for generating several theoretical propositions concerning nondepressives and depressives processing of personal information.

Turning first to the Nondepressives, the present findings revealed that self-reference enhancement was limited only to nondepressive content. This pattern corroborates earlier findings for nonpathological personal adjectives (Kuiper & Rogers, 1979; Rogers et al., 1977), and also offers strong support for the most robust version of the content-specificity hypothesis for nondepressives. Yes-rated nondepressed adjectives appear to form part of the nondepressive's structural component of self. As such, they facilitate self-reference judgments by providing a reservoir of self-related experiences which can be tapped to assist in the interpretation and encoding of any new input. When employed in this fashion, the self-schema imparts a rich and extensive memory trace towards compatible self-related information. This elaborate trace then produces enhanced recall for nondepressed content.

More generally, the nondepressive results provide an opportunity to further refine the model which casts the self as a cognitive prototype or schema. First, these findings offer yet another demonstration of the important role played by the self-schema in the human information processing sequence. In addition, however, they also specify the exact content conditions under which a self-reference judgment produces enhanced recall. The failure to obtain elevated recall for depressed content clearly indicates that the act of making a self-reference judgment alone is insufficient to bolster recall. It is only when this judgment is made in conjunction with the content already embodied in the self-schema that superior recall results. This finding for nondepressed adjectives highlights the crucial interactive nature of the self-schema, in which the elaboration and increased retention of any new input information requires the prior representation of compatible content in the self structure.

A Self-schema Model for Depression

Another major proposition derived from the current data pertains to the potential existence of a self-schema in depressed individuals. The overall recall pattern for depressives argues against a nonschema interpretation, as advanced by Davis (1979). Instead, the findings suggest that depressives also employ a self-schema in personal information processing, but one which may differ in several ways from a nondepressive's.

In order to accomodate and explain these various changes it may prove beneficial to explicitly formulate a self-schema model for depression. A major tenet of this model is that severity level, or depth of depression , is a critical factor in determining both the composition (i.e., content) and cohesiveness (i.e., degree of organization) of the depressive's self-schema. As severity level progresses, the ratio of depressed to nondepressed content would increase systematically. At moderate or medium levels, this would produce approximately equivalent pathological and nonpathological content. At more extreme levels there would be an over-representation of depressive content. The precise nature of this composition would then be a key determinant in delimiting the type of personal information which might be suitably self-referenced. For example, medium depressives might process both nondepressed and depressed content in terms of their self-schema, whereas more severe depressives may only be capable of self-referencing pathologically-oriented material. This projected sequence would be theoretically consistent with Beck's (1976) notions of centrality and egocentricity. Presumably, the increasing prominence or centrality of depressed content in a severe depressive's self-schema would enhance the probability of "egocentric" information processing via this cognitive structure.

A second aspect of the proposed model is that it also acknowledges the importance of cohesiveness or degree of organization of the self-schema in facilitating self-referent processing. For nonpathological samples, considerable research has supported the view that the self-schema is an integrated, well-organized, and highly stable cognitive structure (c.f., Rogers et al., in press). However, the initial phase of depression might be marked by a period of confusion surrounding the individual's self-schema. While this person may have already begun to experience some of the symptoms relating to depression, their very mild nature may prohibit positive and precise identification at this stage. This potential difficulty in labelling non-severe depression-related experiences may then contribute to a state of uncertainty and disorganization concerning one's self-concept (Epstein, 1973; Rosenberg, 1979). This diffuse state may even generalize to include formerly stable nonpathological content in the person's self-schema. Overall, this lack of organization and uncertainty would reduce the effectiveness of the self-schema. It would no longer function as an efficient and reliable cognitive structure for processing and retaining personally relevant information. For mildly-depressed individuals this would then result in the observed failure in the present study to obtain significant self-reference enhancement effects for either depressed or nondepressed content.

The above interpretation also has implications for the pattern of findings which should obtain for individuals at deeper levels of depression. Increased severity of symptoms may facilitate proper identification and labelling. In combination with the possibility that exposure to these more severe symptoms has been for an increased time period, medium depressives may now have incorporated depressed content into their self-schema. This identification and subsequent accomodation would relieve the ambiguity and uncertainty surrounding

the self-schema of mild depressives. It would also mark the return of a more organized and cohesive self-structure (albeit with additional and different content from the nondepressives). This re-integrated self-schema would then assist in self-descriptive judgments for both nondepressed and depressed content personal adjectives, as witnessed for medium depressives in the present study.

The utility of the proposed model may lie in its ability to serve as an organizing framework for drawing together and clarifying some of the cognitive literature pertaining to depression. In addition to providing an explanation for the present results, an extrapolation of the theoretical components of the model to more severe levels of depression can also account for the "non-schema" results reported by Davis (1979). His failure to find self-reference effects for nondepressed content in more severe depressives points to the possibility that depressed content (which was not assessed) may have displaced nonpathological content in the self-schema of these individuals. Thus, one would not expect enhanced self-reference recall for incompatible content.

A second illustration of the proposed model's explanatory power comes from a reassessment of results documented by Lloyd & Lishman (1975). Basically, they found that increasing depression was associated with a progressively diminishing ratio between the speed of recall for pleasant versus unpleasant events. For the least severe depressives, pleasant memories were recalled faster that unpleasant. This relationship then reversed for the most depressed subjects. Short response latencies in this paradigm may possibly indicate the use of a well-organized and efficient cognitive schema, to assist in the quick outputing of information. As such, the Lloyd & Lishman ratio is quite consistent with the proposed model. Re-interpreted in this framework, the diminishing ratio traces the evolution of the depressive self-structure, from a secondary to primary emphasis on depressed content.

In summary, the self-schema model may prove of some value in advancing our knowledge of cognitive processes in depression. However, considerable research is still required to elucidate more fully some of the theoretical concepts incorporated in the model (i.e., degree of cohesiveness as one example). Further work might also include extensions to more severe levels of depression, and the use of individualized testing procedures, to permit an assessment of rating times for personality judgments about various types of adjectives. Another potential line of research deriving from the current model concerns interpersonal relationships and depression. From a social cognition vantage-point, the focus of this research would be on the exploration of any cognitive distortions or pecularities in the depressive's evaluations, judgments, and descriptions of other individuals. This work may serve to bridge research on interpersonal relationships in depression (i.e., Coyne, 1976; Lewinsohn, 1975) with contemporary literature suggesting the self-schema may function to organize information about others in memory (Hamilton, in press; Kuiper & Rogers, 1979; Ostrom, Pryor, & Simpson, in press). Hopefully, this strategy of amalgamation may ultimately result in the accumulation of knowledge which can then be applied to the prevention or treatment of this debilitating disorder.

Reference Note

1. Derry, P. A., & Kuiper, N. A. Content, imagery, social desirability, and emotionality ratings for depressed and nondepressed personal adjectives. Unpublished manuscript, University of Western Ontario, 1979.

References

Bartlett, F. C. Remembering. Cambridge, England: Cambridge University Press, 1932.

Beck, A. T. Cognitive therapy and the emotional disorders. New York: International Universities Press, 1976.

Beck, A. T., & Beaumesderfer, A. Assessment of depression: The depression inventory. In P. Pichot (Ed.), Psychological measurements in psychopharmacology and modern pharmacopsychiatry. (Vol. 7). Basel, Switzerland: Kerger, 1974.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. An inventory for measuring depression. Archives of General Psychiatry, 1961, 4, 561-571.

Bower, G. H. Contacts of cognitive psychology with social learning theory. Cognitive Therapy & Research, 1978, 2, 123-146.

Bower, G. H., & Gilligan, S. G. Remembering information related to one's self. Journal of Research in Personality, in press.

Bumberry, W., Oliver, J.M., & McClure, J. N. Validation of the Beck Depression Inventory in a university population using psychiatric estimate as the criterion. Journal of Consulting and Clinical Psychology, 1978, 46, 150-155.

Coyne, J. C. Depression and the response of others. Journal of Abnormal Psychology, 1976, 85, 186-193.

Craik, F. I. M., & Tulving, E. Depth of processing and the retention of words in episodic memory. Journal of Experimental Psychology: General, 1975, 104(3), 268-294.

Davis, H. Self-reference and the encoding of personal information in depression. Cognitive Therapy & Research, 1979, 3(1), 97-110.

Epstein, S. The self concept revisited: Or a theory of a theory. American Psychologist, 1973, 28, 404-416.

Hamilton, D. L. Cognitive representations of others. In E. T. Higgins, C. P. Herman, and M. P. Zanna (Eds.), Social Cognition: The Ontario Symposium. Hillsdale, N.J.: Lawrence Erlbaum Associates, in press.

Hammen, C. L., & Peters, S. D. Interpersonal consequences of depression: Responses to men and women enacting a depressed role. Journal of Abnormal Psychology, 1978, 87, 322-332.

Jackson, D. N. A manual for the Personality Research Form. Goshen, N.Y.: Research Psychologists Press, 1967.

Kovacs, M., & Beck, A. T. Maladaptive cognitive structures in depression. American Journal of Psychiatry, 1978, 135, 525-533.

Kucera, H., & Francis, W. N. Computational analysis of present-day American English. Providence, Rhode Island: Brown University Press, 1967.

Kuiper, N. A. Depression and causal attributions for success and failure. Journal of Personality and Social Psychology, 1978, 36, 236-246.

Kuiper, N. A., & Rogers, T. B. The encoding of personal information: Self-other differences. Journal of Personality and Social Psychology, 1979, 37 (4), 499-514.

Lewinsohn, P. M. The behavioral study and treatment of depression. In M. Hersen, R. Eisler, & P. Miller (Eds.), Progress in behaviour modification. New York: Academic Press, 1975.

Lloyd, G. G., & Lishman, W. A. Effect of depression on the speed of recall of pleasant and unpleasant experiences. Psychological Medicine, 1975, 5, 173-180.

Lubin, B. Adjective checklists for measurement of depression. Archives of General Psychiatry, 1965, 12, 57-62.

Markus, H. Self-schemata and processing of information about the self. Journal of Personality and Social Psychology, 1977, 35, 63-78.

Markus, H., & Smith, J. The influence of self-schemas on the perception of others. In N. Cantor and J. Kihlstrom (Eds.), Cognition, Social Interaction, and Personality. Hillsdale, N.J.: Lawrence Erlbaum Associates, in press.

Miller, W. R. Psychological deficit in depression. Psychological Bulletin, 1975, 82, 238-260.

Miller, E., & Lewis, P. Recognition memory in elderly patients with depression and dementia: A signal detection analysis. Journal of Abnormal Psychology, 1977, 86, 84-86.

Nelson, R. E., & Craighead, W. E. Selective recall of positive and negative feedback, self-control behaviours, and depression. Journal of Abnormal Psychology, 1977, 86, 379-388.

Ostrom, T. M., Pryor, T. B., & Simpson, D. D. The organization of social information. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), Social Cognition: The Ontario Symposium. Hillsdale, N. J.: Lawrence Erlbaum Associates, in press.

Paivio, A., Yuille, J. C., & Madigan, S. A. Concreteness, imagery, and meaningfulness values for 925 nouns. Journal of Experimental Psychology, Monograph Supplement, 1968, 76, (1, part 2)

Rogers, T. B. A model of the self as an aspect of the human information processing system. In N. Cantor & J. Kihlstrom (Eds.), Cognition, Social Interaction, and Personality. Hillsdale, N. J.: Lawrence Erlbaum Associates, in press.

Rogers, T. B., Kuiper, N. A., & Kirker, W. S. Self-reference and the encoding of personal information. Journal of Personality and Social Psychology, 1977, 35, 677-688.

Rogers, T. B., Kuiper, N. A., & Rogers, P. J. Symbolic distance and congruity effects for paired-comparisons judgments of degree of self-reference. Journal of Research in Personality (Special Issue), in press.

Rogers, T. B., Rogers, P. J., & Kuiper, N. A. Evidence for the self as a cognitive prototype: The "false alarms effect". Personality and Social Psychology Bulletin, 1979, 53-56.

Rosch, E. Cognitive representations of semantic categories. Journal of Experimental Psychology: General, 1975, 104, 192-233.

Rosenberg, M. Conceiving the self. New York: Basic Books, Inc., 1979.

Ross, M., & Sicoly, F. Egocentric biases in availability and attribution. Journal of Personality and Social Psychology, 1979, 37 (4), 322-336.

Table 1

Mean Adjusted Recall for Depressed and Nondepressed Groups as a Function of Rating Task, Rating, and Adjective Content

	YES RATINGS			
	Depressed Content		Nondepressed Content	
Groups	Structural Task	Self-Reference Task	Structural Task	Self-Reference Task
Nondepressives	.12 [a]	.11	.10	.30
Mild Depressives	.16	.25	.20	.26
Medium Depressives	.20	.20	.12	.32
	NO RATINGS			
Groups				
Nondepressives	.10	.15	.22	.27
Mild Depressives	.14	.19	.17	.30
Medium Depressives	.12	.30	.18	.23

[a] Adjusted recall values can range from 0 to 1.00. A value of 1.00 indicates that all adjectives receiving a particular rating (either Yes or No) for a particular task were recalled. A value of 0 indicates that none were recalled.

Table 2

Mean Number of Yes Responses for Self-reference Ratings as a Function of Groups and Adjective Content

	Content	
Group	Depressed	Nondepressed
Nondepressed	1.04[a]	10.84
Mild Depressed	3.38	9.19
Medium Depressed	7.85	7.21

[a] Mean Values can range from 0 to 15.